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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,089	08/20/2003	Joseph Shapira	26668	4956

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EXAMINER	
ZEWDU, MELESS NMN	
ART UNIT	**PAPER NUMBER**
2683	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/644,089	SHAPIRA, JOSEPH	
	Examiner	Art Unit	
	Meless N. Zewdu	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-35* is/are pending in the application.

4a) Of the above claim(s) *5-27* is/are withdrawn from consideration.

5)☒ Claim(s) *28 and 29* is/are allowed.

6)☒ Claim(s) *30-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Request

1. This action is in response to the communication filed on 7/14/05.

2. Claims 28-35 are pending in this action.

3. Applicant, in the remarks section, alleges claim 32 is cancelled while the claim remains live in the listing of the claim. Examiner treats claim 32 as live claim since it is not cancelled. Besides, claim 32 lacks a period at the end of the limitation, thereby making it undeterminable as to whether it continues or stops there.

4. This action is final.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al. (US 5,890,055) in view of Runyon (US 5,966,102).

As per claim 30: Chu et al. discloses a method for repeating a randomly polarized signal (see abstract; fig. 2; col. 1, line 64-col. 2, line 21) comprising the steps of:

Receiving a polarized signal comprising a first polarization and a second polarization and having a relationship therebetween (see col. 6, lines 35-46) and retransmitting said polarized signal with retention of said relationship (see col. 5, lines 13-16); wherein the relationship of the polarizations of the signal is maintained by the orthogonality of the polarizations. But, Chu et al. does not explicitly teach about steps of receiving said signal at a first and a second states, thereby providing a first portion of said signal, received at said first polarization state and a second portion of said signal, received at said second polarization state; and transmitting said first portion according to said first polarization state and said second portion according to said second polarization state, as claimed by applicant. However, in a related field of endeavor, Runyon et al. teaches about a planar array antenna having radiating elements featured by dual simultaneous polarized states and controlled by a central polarization control, wherein a first and a second polarized states of a signal are received by two antennas for transmission at same polarization state (see entire document, particularly, abstract; col. 3, line 17-col. 4, line 28; col. 21, line 63-col. 22, line 26). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Chu et al.'s reference with that of Runyon et al. for the advantage of having a planar antenna having wave radiators exhibiting dual polarization sates (see col. 1, lines 5-8).

As per claim 31: the method according to claim 30, further comprising the step of amplifying said polarized signal, before said step of transmitting reads on '102 (see fig. 12, elements 87a and 87b; col.17, lines 13-45).

As per claim 32: the method according to claim 30, wherein said first polarization sate is orthogonal to said second polarization state reads on '102 (see col. 2, lines 45-63).

Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al. in view of Reudink (US 5,648,968)..

As per claim 33: Chu discloses a repeating device comprising:

a donor side transceiver section (see fig. 2, elements 100-103). The repeaters of the prior art include a donor side transceiver for communication with the HUB.

a subscriber side transceiver section (see (fig. 2, elements 100-103). The repeaters of the prior art include a subscriber side transceiver for communication with the indicated mobile/wireless units.

amplification means connected between said donor side transceiver section and said subscriber side transceiver section (see fig. 3, elements 303 and 307; col. 5, line 13-col. 6, line 9). But, Chu et al. does not explicitly teach about --- said donor side including a plurality of donor side transceiver elements, transmitting outgoing signals in a first non-correlated manner, and said subscriber side including a plurality of subscriber side transceiver elements, receiving incoming signals in a second non-correlated manner, the device being configured to retain the relationship of signals passing between the donor side and the subscriber side, as claimed by applicant. However, in a related field of endeavor, Reudink teaches about a base station (which is functionally similar to a repeater) that includes a plurality of antenna elements for transmitting outgoing signals uncorrelated and receiving incoming signals also uncorrelated (see col.

3, lines 28-45; col. 4, lines 26-41). Outgoing signals are kept uncorrelated so that they retain their relationship. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the teaching of Chu et al. with the teaching of Reudink for the advantage of using combined antennas for data transmission (see col. 1, lines 19-22).

As per claim 34: the repeater according to claim 33, wherein at least one of said first non-correlated manner and said second non-correlated manner incorporates space diversity reads on '968 (see col. 3, lines 29-45). Still, spacing is required though less than the previously recognized prior art.

As per claim 35: the repeater according to claim 33, wherein at least one of said first non-correlated manner and said second non-correlated manner incorporates polarization diversity reads on '968 (see col. 6, lines 47-59).

Response to Arguments

Applicant's arguments filed 7/14/05 have been fully considered but they are not persuasive. Arguments and responses are presented herein-bellow.

Argument I: with regard to claims 30 and 31, applicant argues by saying "by contrast, with the invention, the retransmitted signal is polarized as received.

Response I: examiner respectfully disagrees with the argument. In Chu et al., it is taught that the Hub can exchange with a repeater polarized signal. The key question here is the repeater transmitting/receiving polarized signals and keeping the signals

uncorrelated. Where the signal was originally polarized does not carry patentable weight since both a repeater and a base station/Hub devices capable of polarizing a signal into different polarization components. Furthermore, repeaters are known to be used to replicate, i.e., receive (original signal) and transmit a received signal often merely by amplifying it.

Argument II: with regard to claim 30, applicant further argues by saying that neither Chu nor Runyon mention or deal with the problem of retaining the signal polarization between the donor side and the subscriber side.

Response II: examiner respectfully disagrees. It is known to replicate or produce a redundant/duplicate signal using polarization or space or antenna diversity, for transmission over an air interface. The key feature, that carries patentable weight, is to transmit (keep) the redundant signals in isolation or uncorrelated, which, in this case is taught by Runyon, as discussed in the rejection of claim 30. Hence, the argument is not persuasive.

Furthermore, applicant extends the same line of argument regarding claim 33. Examiner does not see the need to repeat the same arguments and responses and instead would like to refer applicant to the above responses.

Allowable Subject Matter

Claims 28 and 29 are allowed.

The following is an examiner's statement of reasons for allowance:

As per claims 28 and 29: the claims are directed to a repeater device in a wireless communication. The prior art of record does not teach or fairly suggest the embodiment of a repeater that utilizes two diversity antennas both on the side of the donor and mobile transceivers' side and wherein the two diversity antennas on both said sides are orthogonal polarized and having an amplifier connected to each polarized antennas, as recited in claims 28 and 29.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N Zewdu whose telephone number is (703) 306-5418. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Meless Zewdu MNZ

Examiner

12 October 2005.

WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600